ACC.14
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A904
JACC April 1, 2014
Volume 63, Issue 12

Heart Failure and Cardiomyopathies

CONSISTENCY OF AGREEMENT BETWEEN INDEPENDENT ASSESSORS OF 3-DIMENSIONAL GLOBAL LONGITUDINAL STRAIN OF RIGHT VENTRICLE USING TRANSTHORACIC ECHOCARDIOGRAPHY IN A POPULATION >50% PULMONARY HYPERTENSION

Poster Contributions
Hall C
Sunday, March 30, 2014, 3:45 p.m.-4:30 p.m.

Session Title: Approaches to Advanced Heart Failure: From VAD, Transplant, Palliative Care to New Perctutaneous Therapies
Abstract Category: 12. Heart Failure and Cardiomyopathies: Clinical
Presentation Number: 1221-191

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Background: We evaluated consistency of agreement between independent assessors of two dimensional (3D) global longitudinal strain (GLS) of right ventricle (RV) using transthoracic echocardiography (TTE) in the population, more than half of whom were pulmonary hypertensive (PH) patients.

Methods: A total of 50 subjects (35 PH patients confirmed by right heart catheterization (29 female, 56 ± 14 yrs, 19 chronic thromboembolic pulmonary hypertension and 16 pulmonary arterial hypertension) and 15 controls (10 female, 55 ± 23 yrs) underwent TTE (Vivid E9, GE) to measure 2D and 3D GLS of whole RV and only RV free wall not including the inter-ventricular septum and each RV parameter using ECHO PAC and TOMTEC software.

Results: Correlation coefficients (CC) of estimates of 3D RV end-diastolic volume, end-systolic volume, and ejection fraction according to the two assessors were 0.771 (3D RV EDV, P < 0.001), 0.790, (3D RV ESV, P < 0.001), and 0.613 (3D RV EF, P < 0.001). CC of 2D and 3D GLS of whole RV and those of only RV free wall not including the inter-ventricular septum were 0.702 (2D GLS of whole RV, P < 0.001), 0.799 (3D GLS of whole RV, P < 0.001), 0.749 (2D GLS of RV free wall alone, P < 0.001), and 0.691 (3D GLS of RV free wall alone, P < 0.001).

Conclusions: Consistency of independent estimates of 3D GLS of whole RV using TTE was better than for 2D GLS of whole RV and only RV free wall not including the inter-ventricular septum and 3D GLS of RV free wall alone and other 3D RV parameters in the population, including in PH patients.